BULLETIN OF MECHANICAL ENGINEERING EDUCATION

INDEX

Volume 4

Issue numbers in bold figures, page numbers in light figures

Analogue Methods,
  Introducing the Electronic Analogue Computer by way of Kinematic Geometry, F. R. E. Crossley, **2**, 145.
  Network Analyser for Instructional Purposes, F. W. Schmidt and C. Birnie, Jr., **1**, 37.
  Servomechanism Stabilization by Analogue Simulation, T. H. Lambert and R. M. Davies, **1**, 43.
Apparatus for Demonstrating Frequency Responses, An, A. H. Richards, **2**, 101.
Application of Hamilton's Principle to Continuous Mechanical Systems, The, C. W. Kilmister and W. Carnegie, **1**, 49.
Applied Mechanics, The Teaching of—, K. R. Knowles, **1**, 3.
  ibid, Letter, B. Hardcastle, **4**, 341.
Approximate Analysis of the Motion of a Rolling Pendulum with Finite Amplitude, An, W. A. C. Swift, **3**, 209.
Automatic Control, An Introduction; C. R. Webb, Book Review, R. Bell, **4**, 344.

Bakhtar, F. and Scott, B. F., Quizzing—An Aid in the Assessment of Student Performance, **2**, 125.
Basic Drawing for Engineering Technology; R. S. Hoelscher, *et al.*, Book Review, G. R. Schiffer, **1**, 81.
Bell, R., Automatic Control, An Introduction; C. R. Webb, Book Review, **4**, 344.
Belt Friction Apparatus for Static and Dynamic Tests, J. Michalski, **2**, 85.
Bending Stresses in Plates, The Experimental Determination of—, R. Kitching, **3**, 227.
Benson, R., Centrifugal Compressor Stage; T. B. Ferguson, Book Review, **1**, 83.
Birnie, C. Jr. and Schmidt, F. W., Network Analyser for Instructional Purposes, **1**, 37.
Brann, R. P., Determination of the Stability Criterion of a Flexibly-Mounted Rolling Wheel, **2**, 93.
Brotton, D. M., Matrix Methods of Structural Analysis, R. R. Livesley, Book Review, **3**, 241.
Burrell, G. J.,
  First Law of Thermodynamics—Application of Energy Equation in Experimental Analysis, **4**, 283.
  Stagnation Point Paradox—An Experimental Investigation, **2**, 115.

Carnegie, W. and Kilmister, C. W., The Application of Hamilton's Principle to Continuous Mechanical Systems, **1**, 49.
Centrifugal Compressor Stage; T. B. Ferguson, Book Review, R. S. Benson, **1**, 83.
Centripetal Acceleration, Note on—, Letter, R. M. Helsdon, **1**, 79.
Chandler, D. C. and Gregory, G. M. W., An Experiment to Demonstrate the Theories of Elastic Failure, **2**, 177.
Compound Pendulum with Finite Displacement, The—, W. A. C. Swift, **2**, 183.
Concrete Specimens, Optimum Design of a Tensile Stressing Attachment for Rectangular Section—, G. R. Harvey, **3**, 203.
Counter Revolutions: A Problem in Experimental Accuracy, M. A. Plint, **4**, 339.
Coxon, M., Comments on "The Experimental Determination of the Lift and Drag of a Spinning Ball", **2**, 89.
Cripps, J. J., Cylinders Under Pressure, **3**, 217.
Crossley, F. R. E., Introducing the Electronic Analogue Computer by way of Kinematic Geometry, **2**, 145.
Cylinders Under Pressure, J. J. Cripps, **3**, 217.

Davies, R. M. and Lambert, T. H., Servomechanism Stabilization by Analogue Simulation, **1**, 43.

Determination of the Stability Criterion of a Flexibly-Mounted Rolling Wheel, R. P. Brann, **2**, 93.

Digital Computer in Teaching Kinematics of Mechanisms, A. Ülke and H. L. Dowell, Jr., **2**, 137.

Dowell, H. L. Jr. and A. Ülke, Digital Computer in Teaching Kinematics of Mechanisms, **2**, 137.

Duncan, J. L., The Hydrostatic Bulge Test as a Laboratory Experiment, **1**, 29.

Dynamical Concepts, Measurements and Units, S. A. V. Swanson, **4**, 309.

Dynamic Loads, Stresses Caused by—, G. Sved, **2**, 107.

Dynamic Measurement of Displacement Using Small Inductance Coils, R. W. Upfold, **4**, 269.

Dynamics; L. E. Goodman and W. H. Warner, Book Review, B. J. Fielding, **3**, 243.

Dynamics for Engineers via Hamilton's Principle, W. A. Woods, **1**, 161.

Dynamic Tests, Belt Friction Apparatus for Static and—, J. Michalski, **2**, 85.

Earles, S. W. E., Rotation of Compound Thick Cylinders, **1**, 23.

Elements of Experimental Stress Analysis; A. W. Hendry, Book Review, R. Kitching, **3**, 241.

Energy Methods in Applied Mechanics; H. L. Langhaar, Book Reviews, S. J. McMinn, **4**, 344.

Engineering Dynamics; S. A. V. Swanson, Book Review, B. J. Fielding, **3**, 242.

Examples in Applied Mechanics for National Certificate Students, 2nd Year 02; R. S. Paradise and G. A. Church, Book Review, **3**, 242.

Experimental Determination of Bending Stresses in Plates, The—, R. Kitching, **3**, 227.

Experimental Determination of the Lift and Drag of a Spinning Ball, The Comments on—, M. Coxon, **2**, 89.

Experiment to Demonstrate the Theories of Elastic Failure, An—, G. M. W. Gregory and D. C. Chandler, **2**, 177.

Fatigue,
  - —Failure and Cyclic Stress Analysis using Mohr's Circle, R. E. Little, **2**, 171.
  - Graphical Solution for — Problems, K. E. Machin, **2**, 111.

Fielding, B. J.,
  - "Dynamics" and "Statics"; L. E. Goodman and W. H. Warner, Book Review, **3**, 243.
  - Engineering Dynamics; S. A. V. Swanson, Book Review, **3**, 242.
  - Introduction to the Mechanics of Machines, An—; J. L. M. Morrison and B. Crossland, Book Review, **4**, 343.
  - Laboratory Work Relative to the Theory of Machines Course, **1**, 15.

First Law of Thermodynamics, Application of Energy Equation in Experimental Analysis, G. J. Burrell, **4**, 283.

Flow Visualization, The Smoke Screen Technique of—, R. T. Griffiths, **1**, 47.

Fluid Mechanics, Rationalization in— (with Particular Reference to Open Channels), C. J. M. Lee, **4**, 293.
  - *ibid.*, Letter, J. R. D. Francis, **4**, 297.

Francis, J. R. D., Comments on "Rationalization in Fluid Mechanics", Letter, **4**, 297.

Freehand Sketching for Technical Students; Book Review, G. R. Schiffer, **1**, 81.

Frequency Response, An Apparatus for Demonstrating—, A. H. Richards, **2**, 101.

Generalized Control Volume Analyses with Application to the Basic Laws of Mechanics and Thermodynamics, A. G. Hansen, **2**, 161.

Graphical Solution for Fatigue Problems, A—, K. E. Machin **2**, 111.

Gray, C. A. M. and Upfold, R. W., Visual Aid for the Teaching of Design, **3**, 233.

Gregory, G. M. W. and Chandler, D. C., An Experiment to Demonstrate the Theories of Elastic Failure, **2**, 177.

Griffiths, R. T., The Smoke Screen Technique of Flow Visualization, **1**, 47.

Hamilton's Principle,
  Dynamics for Engineers via—, W. A. Woods, **1**, 161.
  The Application of—to Continuous Mechanical Systems, C. W. Kilmister and W. Carnegie, **1**, 49.
Hansen, A. C., Generalized Control Volume Analyses with Application to the Basic Laws of Mechanics and Thermodynamics, **1**, 161.
Hardcastle, B., The Teaching of Applied Mechanics, Letter, **4**, 341.
Harrison, P. W., The Size of the Yard, **2**, 181.
Harvey, G. R., Optimum Design of a Tensile Stressing Attachment for Rectangular Section Concrete Specimens, **3**, 203.
Heat Transfer Problems Using a Non-Iterative Numerical Method, Solution of One-Dimensional Steady State—, C. D. McKay and A. C. Leonard, **4**, 315.
Heldson, R. M., A Note on Centripetal Acceleration, Letter, **1**, 790.
Higgins, H., Photoelasticity—A Tool for An Engineer, **4**, 301.
Hydrostatic Bulge Test as a Laboratory Experiment, The—, J. L. Duncan, **1**, 29.

Introducing the Electronic Analogue Computer by way of Kinematic Geometry, F. R. E. Crossley, **2**, 145.
Introduction to the Mechanics of Machines, An; J. L. M. Morrison and B. Crossland, Book Review, B. J. Fielding, **4**, 343.

Johnston, A. K., Letter, **3**, 237.

Kilmister, C. W. and W. Carnegie, The Application of Hamilton's Principle to Continuous Mechanical Systems, **1**, 49.
Kitching, R.,
  Elements of Experimental Stress Analysis; A. W. Hendry, Book Review, **3**, 241.
  The Experimental Determination of Bending Stresses in Plates, **3**, 227.
Knowles, K. R., The Teaching of Applied Mechanics, **1**, 3.

Laboratory Work Relative to the Theory of Machines Course, B. J. Fielding, **1**, 15.
Lambert, T. H. and Davies, R. M., Servo-mechanism Stabilization by Analogue Simulation, **1**, 43.
Lamble, J. H., The World Congress on Engineering Education (The Exhibition of Engineering Educational Resources, 259), **4**, 245.
Lee, C. J. M., Rationalization in Fluid Mechanics (with Particular Reference to Open Channels), **4**, 293.
Leonard, A. C., and McKay, C. D., The Solution of One-Dimensional Steady-State Heat Transfer Problems Using a Non-Iterative Numerical Method, **4**, 315.
Little, R. E., Fatigue Failure and Cyclic Stress Analysis using Mohr's Circle, **2**, 171.

Machin, K. E., A Graphical Solution for Fatigue Problems, **2**, 111.
Managing Function in the Laboratory, The—, J. L. Wighton, **3**, 189.
Mann, L. Jr., Quantitative Approach to Class Size and Instructor Load, **2**, 169.
Matrix Methods of Structural Analysis; R. K. Livesley, Book Review, D. M. Brotton, **3**, 241.
McKay, C. D. and Leonard, A. C., The Solution of One-Dimensional Heat Transfer Problems Using a Non-Iterative Numerical Method, **4**, 315.
McMinn, S. J., Energy Methods in Applied Mechanics; H. L. Langhaar, Book Review, **4**, 344.
Mechanics of Machines, The Teaching of—, C. R. Webb, **1**, 11.
Meyer, M. L., A Simple Derivation of Lamé's Equations, **4**, 277.
Michalski, J., Belt Friction Apparatus for Static and Dynamic Tests, **2**, 85.

Network Analyser for Instructional Purposes, F. W. Schmidt and C. Birnie Jr., **1**, 37.

Optimum Design of a Tensile Stressing Attachment for Rectangular Section Concrete Specimens, G. R. HARVEY, **3**, 203.

PLINT, M. A., Counter Revolutions: A Problem in Experimental Accuracy, **4**, 339.
Photoelasticity—A Tool for An Engineer, H. HIGGINS, **4**, 301.

Quantitative Approach to Class Size and Instructor Load, L. MANN Jr., **2**, 169.
Quizzing—An Aid in the Assessment of Student Performance, F. BAKHTAR and B. F. SCOTT, **2**, 125.

Rationalization in Fluid Mechanics (with Particular Reference to Open Channels), C. J. M. LEE, **4**, 293.
  ibid, Letter, J. R. D. FRANCIS, **4**, 297.
RICHARDS, A. H., An Apparatus for Demonstrating Frequency Response, **2**, 101.
Rolling Pendulum with Finite Amplitude, An Approximate Analysis of the Motion of, W. A. C. SWIFT, **3**, 209.
Rotation of Compound Thick Cylinders, S. W. E. EARLES, **1**, 23.

SCHIFFER, G. R.,
  Basic Drawing for Engineering Technology; R. S. HOELSCHER *et al.*, Book Review, **1**, 81.
  Freehand Sketching for Technical Students; Book Review, **1**, 81.
SCHMIDT, F. W. and BIRNIE, C. Jr., Network Analyser for Instructional Purposes, **1**, 37.
SCOTT, B. F. and BAKHTAR, F., Quizzing—An Aid in the Assessment of Student Performance, **2**, 125.
Servomechanism Stabilization by Analogue Simulation, T. H. LAMBERT and R. M. DAVIES, **1**, 43.
Simple Derivation of Lamé's Equations, A—, M. L. MEYER, **4**, 277.
Size of the Yard, The—, P. W. HARRISON, **2**, 181.
Smoke Screen Technique of Flow Visualization, The, R. T. GRIFFITHS, **1**, 47.
Solution of One-Dimensional Steady-State Heat Transfer Problems Using a Non-Iterative Numerical Method, The—, C. D. MCKAY and A. C. LEONARD, **4**, 315.
SPENCER, G. C., On Teaching the Use of Strain Gauges, **1**, 21.
Stability Criterion of a Flexibly-Mounted Rolling Wheel, Determination of the—, R. P. BRANN, **2**, 93.
Stagnation Point Paradox—An Experimental Investigation, G. J. BURRELL, **2**, 115.
Statics; L. E. GOODMAN and W. H. WARNER, Book Review, B. J. FIELDING, **3**, 243.
Strain Gauges, On Teaching the Use of—, G. C. SPENCER, **1**, 21.
Stresses Caused by Dynamic Loads, G. SVED, **2**, 107.
Survey of Academic Loads Associated with the Engineering Laboratory, J. L. WIGHTON, **4**, 323.
Survey of the Function of Chief Technician in Engineering College Laboratories, J. L. WIGHTON, **4**, 331.
SVED, G., Stresses Caused by Dynamic Loads, **2**, 107.
SWANSON, S. A. V., Dynamical Concepts, Measurements and Units, **4**, 309.
SWIFT, W. A. C.,
  An Approximate Analysis of the Motion of a Rolling Pendulum with Finite Amplitude, **3**, 209.
  The Compound Pendulum with Finite Displacement, **2**, 183.

Teaching of Applied Mechanics, The, K. R. KNOWLES, **1**, 3.
Teaching of Mechanics of Machines, The, C. R. WEBB, **1**, 11.
Teaching the Use of Strain Gauges, On, G. C. SPENCER, **1**, 21.
Theories of Elastic Failure, An Experiment to Demonstrate—, G. M. W. GREGORY and D. C. CHANDLER, **2**, 177.
Theory of Machines Course, Laboratory Work Relative to—, B. J. FIELDING, **1**, 15.

Thick Cylinders,
  Rotation of Compound—, S. W. E. EARLES, **1**, 23.
  Simple Derivation of Lamé's Equations, A—, M. L. MEYER, **4**, 277.

ÜLKE, A. and DOWELL, H. L. Jr., Digital Computer in Teaching Kinematics of Mechanisms, **2**, 137.
UPFOLD, R. W.,
  — and GRAY, C. A. M., Visual Aid for the Teaching of Design, **3**, 233.
  Dynamic Measurement of Displacement Using Small Inductance Coils, **4**, 269.

Visual Aid for the Teaching of Design, C. A. M. GRAY and R. W. UPFOLD, **3**, 233.

WEBB, C. R., The Teaching of Mechanics of Machines, **1**, 11.
WIGHTON, J. L.,
  Managing Function in the Laboratory, The—, **3**, 189.
  Survey of Academic Loads Associated with the Engineering Laboratory, **4**, 323.
  Survey of the Function of Chief Technician in Engineering College Laboratories, **4**, 331.
WOODS, W. A., Dynamics for Engineers via Hamilton's Principle, **1**, 161.
World Congress on Engineering Education, The—, (and The Exhibition of Engineering Educational Resources, 259), J. H. LAMBLE, **4**, 245.

Aims and Scope

(a) For the publication of articles about new experimental methods and new experimental demonstrations which are of fundamental value to Mechanical Engineering students at less than graduate level.

(b) To discuss the construction of apparatus for specific tests and demonstrations of value in education.

(c) To carry discussions concerning teaching methods and aids—e.g. the use of films and models—and to advertise the coming of new ones as these become available.

(d) To discuss what new subjects can, or should be, introduced into mechanical engineering syllabuses, with suggestions as to methods of approach, giving sources of material for use in the preparation of lectures.

(e) To review books, primarily with use by students in view, and to draw attention to particular papers which will have a value in the education of all engineers.

Notes to Contributors

1. The Editors will be pleased to receive contributions from all parts of the world on matters coming within the purposes of the *Bulletin*. Manuscripts for publication should be addressed to them at the Manchester College of Science and Technology.

2. Only articles not previously published will be accepted and authors must agree not to publish elsewhere an article submitted to and accepted for the *Bulletin*.

3. Letters to the Editor may include:
   (a) Criticisms of articles recently published in the *Bulletin*.
   (b) Comments on current Engineering Educational matters of academic and technical interest.

4. All contributions must be in English, the Editors at their discretion will modify style should this be necessary.

5. Manuscripts should be typed with double spacing, with ample margins and submitted in duplicate. Pages should be numbered consecutively.

6. The title of the article, the author's name and the address from which the article comes should appear at the head of the article. In the case of joint authors, it must be made clear to which of them correspondence and proofs are to be forwarded.

7. The essential contents of each article should be recapitulated in a brief summary.

8. Drawings, etc., should be in ink, about twice the final size required with the lettering clear, "open" and sufficiently large to permit the necessary reduction of size in block-making. Line drawings should include all relevant detail. Dye-line prints should not be sent.

Half-tone illustrations are to be restricted to the minimum necessary, they should accompany the script but must not be included on manuscript pages. Photographs should be enlarged sufficiently to permit clear reproduction, and if words or numbers are to appear on a photograph, two prints should be sent, the lettering being indicated clearly on one print only.

9. References in the text to published literature should be given by numbers in square brackets on the line and these references should be listed together at the end of the article in the order in which they occur in the text. *Double spacing must be used throughout.*

Journal references should be arranged thus:

[1] J. F. DOOLEY and S. S. GILL, *B.M.E.E.* **2**, 41 (1963).

Book references to be given as follows:

[2] J. H. LAMBLE, *Principles and Practice of Non-destructive Testing*, p. 41, Heywood, London (1962).

10. Nomenclature should conform to that most frequently used in the engineering field concerned and, in particular, reference should be made to B.S.1991: Part 4: 1960 for units and abbreviations.

11. All Greek letters and unusual symbols should be identified by name, in the margin, the first time they are used.

12. Tables should be numbered consecutively and should not repeat data available elsewhere in the article.

13. Captions for figures should be typed on a separate sheet and placed at the end of the manuscript.

14. No manuscripts or illustrations accepted for publication will be returned unless a specific request for this to be done is received with the manuscripts.

15. Twenty-five reprints of each article will be sent to the *author* free of charge. Additional copies can be purchased if specified on the reprint order form which will accompany proofs. *Reviewers* will receive one copy of their reviews. *Publishers* will receive two copies of the review.

16. The *Bulletin* will be published quarterly.

PRINTED IN GREAT BRITAIN BY ADLARD AND SON LTD., BARTHOLOMEW PRESS, DORKING, SURREY